

REMARKS

This application has been carefully reviewed in light of the Office Action dated March 27, 2002 (Paper # 5). Claims 1 to 23 are in the application, of which Claims 1, 12, and 23 are independent. Claims 1 to 23 have been amended. Reconsideration and further examination are respectfully requested.

Claims 1 to 5, 7 to 16 and 18 to 23 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,987,460 (Niwa); and Claims 6 and 17 were rejected under 35 U.S.C. § 103(a) over Niwa in view of U.S. Patent No. 5,787,414 (Miike). Reconsideration and withdrawal of these rejections are respectfully requested.

The present invention is generally directed to retrieval of information from a database based on an entered search condition, and display of the retrieved information according to the degrees of coincidence between the information contained in the database and the input search condition.

With respect to specific claim language, as defined by amended independent Claim 1, an information retrieval apparatus includes calculation means for calculating a degree of coincidence between a search condition being input and each information to be retrieved in said database. A determination means determines, on the results of retrieval respectively for the plural information to be retrieved of a high degree of coincidence, the output feature amount of each result of retrieval according to each degree of coincidence. An output means outputs the results of retrieval with an output mode based on each output feature amount.

The applied art of the record is not seen to disclose or suggest the foregoing features of the present invention. In particular, the applied art is not seen to disclose or suggest at least the features of a calculation means for calculating the degree of coincidence between a search condition being input and each information to be retrieved in a database, a determination means for determining, on the results of retrieval respectively for the plural information to be retrieved of a high degree of coincidence, the output feature amount of each result of retrieval according to each degree of coincidence, and an output means for outputting the results of retrieval with an output mode based on each output feature amount.

Specifically, Niwa is seen to concern a document retrieval assisting method (See Niwa, abstract; and col. 2, lines 15 to 38). According to Niwa, topic words are divided into frequency classes according to the frequency of the word in a document group and then displayed as a graph or list form. (See Niwa, col. 2, lines 15 to 38; and col. 6, lines 18 to 60). Niwa, however, is not seen to disclose or suggest at least the features of a calculation means for calculating the degree of coincidence between a search condition being input and each information to be retrieved in a database, a determination means for determining, on the results of retrieval respectively for the plural information to be retrieved of a high degree of coincidence, the output feature amount of each result of retrieval according to each degree of coincidence, and an output means for outputting the results of retrieval with an output mode based on each output feature amount. In summary, Niwa concerns display of a relation of keywords extracted from documents as a search

result and is not seen to possess the ability to determine an output feature amount of each result of retrieval according to each degree of coincidence.

In this regard, Niwa is only seen to display a list of titles of documents that contain the key words, but Niwa is not seen to calculate a degree of coincidence between each input search condition and each of the documents. Accordingly, Applicants submit that Niwa cannot be seen to determine an output feature amount based on the calculated degree of coincidence, and outputting the results in an output mode based on the output feature amount. (See Niwa, col. 6, lines 18 to 60).

At most, Niwa is seen to calculate a "document frequency" which is simply the total number of documents that contain all of the keywords. (See Niwa, col. 9, lines 9 to 27; and Figures 5 to 7). Niwa is not seen to calculate a degree of coincidence to the keywords in each document, or to change an output mode of the search results based on such a calculated degree of coincidence.

Miike is not seen to remedy the above deficiencies of Niwa. Miike concerns a data retrieval system which uses secondary information for retrieval. (See Miike, abstract). As stated in the Office Action, Miike is seen to teach outputting a retrieval result in a visual oriented output method such as character or icon display, or an audio oriented output method such as speech or artificial sound output (Miike, col. 57, lines 29 to 37). However, Miike is not seen to disclose or suggest at least the features of a calculation means for calculating the degree of coincidence between a search condition being input and each information to be retrieved in a database, a determination means for determining, on the results of retrieval respectively for the plural information to be

retrieved of a high degree of coincidence, the output feature amount of each result of retrieval according to each degree of coincidence, and an output means for outputting the results of retrieval with an output mode based on each output feature amount.

Applicants therefore submit that a prime facie case of obviousness has not been set forth with respect to amended independent Claim 1. (See MPEP § 2143.). Instead, the combination alleged as obvious in the Office Action is simply seen to be one of impermissible hindsight based on Applicant's own disclosure.

Therefore, for at least the following reasons, amended independent Claim 1 is believed to be in condition for allowance and such action is respectfully requested. In addition, amended independent Claims 12 and 23 are directed to method and memory medium claims respectively, which include substantially similar features as that of amended independent Claim 1 and are therefore also believed to be allowable for the same reasons set forth above.

The remaining claims depend either directly or indirectly from independent Claims 1, 12 and 23, and recite additional features of the invention which, when taken as a whole, are neither disclosed nor fairly suggested by the applied art and are therefore also believed to be in condition for allowance. Accordingly, independent consideration of each of these claims on their respective merits is respectfully requested.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney may be reached in our Costa Mesa,
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Respectfully submitted,


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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Amended) An information retrieval apparatus comprising:

[input means for entering retrieval condition;]

calculation means for calculating the degree of coincidence between [said retrieval condition] a search condition being input and each information to be retrieved in said database;

determination means for determining, on the results of retrieval respectively for the plural information to be retrieved of a high degree of coincidence, the output feature amount of each result of retrieval according to each degree of coincidence; and

output means for outputting said results of retrieval with an output mode based on each output feature amount.

2. (Amended) An information retrieval apparatus according to claim 1,

wherein:

said database stores language information in respective correspondence with each of said information to be retrieved;

[said input means is adapted to enter said retrieval condition by a natural language;] and

said calculation means is adapted to execute language analysis of said retrieval condition entered by [the] a natural language, thereby calculating a [the] degree of language

coincidence between the result of said language analysis and the language information assigned to each information to be retrieved.

3. (Amended) An information retrieval apparatus according to claim 1, wherein said output feature amount is a [the output] size of the output, and said determination means is adapted to determine a larger output size for a result of a higher degree of coincidence.

4. (Amended) An information retrieval apparatus according to claim 3, wherein said retrieval result is an image, and said output size is a [the image] size of the image.

5. (Amended) An information retrieval apparatus according to claim 3, wherein said retrieval result is a text, and said output size is [the] a character size of the text.

6. (Amended) An information retrieval apparatus according to claim 3, wherein said retrieval result is audio data, and said output size is [the] a loudness thereof.

7. (Amended) An information retrieval apparatus according to claim 1, wherein said retrieval result is an image or a text, and said output feature amount is [the] a display position, and wherein said determination means determines the display position so as to be closer to a specified position for a retrieval result of a higher degree of coincidence.

8. (Amended) An information retrieval apparatus according to claim 7, wherein said specified position is a [the] center of a display area.

9. (Amended) An information retrieval apparatus according to claim 7, wherein said determination means determines [the] a distance from said specified position according to said degree of coincidence and determines the display positions of the retrieval results in [the] positions at said determined distances so as to minimize [the] mutual overlap of the retrieval results.

10. (Amended) An information retrieval apparatus according to claim 1, wherein said determination means determines the output feature amount of each retrieval result, for each of the retrieval results corresponding to the information to be retrieved of a predetermined number in [the] a descending order of the degree of coincidence.

11. (Amended) An information retrieval apparatus according to claim 1, wherein said determination means determines the output feature amount of each retrieval result [,] for each of the retrieval results corresponding to the information to be retrieved having degrees of coincidence exceeding a predetermined threshold value.

12. (Amended) An information retrieval method comprising:
[an input step of entering retrieval condition;]

a calculation step of calculating the degree of coincidence between [said retrieval condition] a search condition being input and each information to be retrieved in said database;

a determination step of determining, on the results of retrieval respectively for the plural information to be retrieved of a high degree of coincidence, the output feature amount of each result of retrieval according to each degree of coincidence; and

an output step of outputting said results of retrieval with an output mode based on each output feature amount.

13. (Amended) An information retrieval method according to claim 12, wherein:

said database stores language information in respective correspondence with each of said information to be retrieved;

[said input step is adapted to enter said retrieval condition by a natural language;]

and

said calculation step is adapted to execute language analysis of said retrieval condition entered by [the] a natural language, thereby calculating [the] a degree of language coincidence between the result of said language analysis and the language information assigned to each information to be retrieved.

14. (Amended) An information retrieval method according to claim 12, wherein said output feature amount is [the output] a size of the output, and said determination

step is adapted to determine a larger output size for a result of a higher degree of coincidence.

15. (Amended) An information retrieval method according to claim 14, wherein said retrieval result is an image, and said output size is [the image] a size of the image.

16. (Amended) An information retrieval method according to claim 14, wherein said retrieval result is a text, and said output size is [the] a character size of the text.

17. (Amended) An information retrieval method according to claim 14, wherein said retrieval result is audio data, and said output size is [the] a loudness thereof.

18. (Amended) An information retrieval method according to claim 12, wherein said retrieval result is an image or a text, and said output feature amount is [the] a display position and said determination step determines the display position so as to be closer to a specified position for a retrieval result of a higher degree of coincidence.

19. (Amended) An information retrieval method according to claim 18, wherein said specified position is a [the] center of a display area.

20. (Amended) An information retrieval method according to claim 18, wherein said determination step determines [the] a distance from said specified position

according to said degree of coincidence and determines the display positions of the retrieval results in [the] positions at said determined distances so as to minimize [the] mutual overlap of the retrieval results.

21. (Amended) An information retrieval method according to claim 12, wherein said determination step determines the output feature amount of each retrieval result, for each of the retrieval results corresponding to the information to be retrieved of a predetermined number, in [the] a descending order of the degree of coincidence.

22. (Amended) An information retrieval method according to claim 12, wherein said determination step determines the output feature amount of each retrieval result[,] for each of the retrieval results corresponding to the information to be retrieved having degrees of coincidence exceeding a predetermined threshold value.

23. (Amended) A computer readable storage medium storing an information retrieval program for controlling a computer to perform information retrieval, said program comprising codes for causing the computer to perform:

[an input step of entering retrieval condition;]

a calculation step of calculating the degree of coincidence between [said retrieval condition] a search condition being input and each information to be retrieved in said database;

a determination step of determining, on the results of retrieval respectively for the plural information to be retrieved of a high degree of coincidence, the output feature amount of

each result of retrieval according to each degree of coincidence; and

an output step of outputting said results of retrieval with an output mode based on
each output feature amount.

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